

### CLAIMS

1. A method for estimating attributes of a transmission line (LP),  
said method comprising the steps of:
  - carrying out reflectometry measurements of said transmission line,
  - 5 - determining from said reflectometry measurements a 1-port scattering  
parameter of said transmission line in a reference impedance base ( $Z_{ref}$ ),  
**characterized in that** said method further comprises the steps of:
    - estimating a characteristic impedance ( $Z_0$ ) of said transmission line,
    - converting said 1-port scattering parameter from said reference  
10 impedance base to an estimated characteristic impedance base, thereby  
yielding a second 1-port scattering parameter with residual near-end  
reflections,
    - determining a time zone wherein said residual near-end reflections are  
enclosed,
    - 15 - neutralizing said time zone in the process of estimating said attributes.
2. A method according to claim 1, **characterized in that** said  
characteristic impedance is estimated by carrying out the steps of:
  - deriving from said (first) 1-port scattering parameter an input impedance  
20 ( $Z_{in}$ ) of said transmission line,
  - defining a parametric model of said characteristic impedance,
  - estimating coefficients of said parametric model with respect to said  
input impedance.
- 25 3. An apparatus (TEST) adapted to estimate attributes of a  
transmission line (LP) and comprising:
  - a reflectometry unit (TDR) coupled to said transmission line and adapted  
to carry out reflectometry measurements of said transmission line,
  - a processing unit (PROC) coupled to said reflectometry unit and adapted  
30 to determine from said reflectometry measurements a 1-port scattering  
parameter of said transmission line in a reference impedance base ( $Z_{ref}$ ),

**characterized in that** said processing unit is further adapted to:

- estimate a characteristic impedance ( $Z_0$ ) of said transmission line,
- convert said 1-port scattering parameter from said reference impedance base to an estimated characteristic impedance base, to thereby yield a  
5 second 1-port scattering parameter with residual near-end reflections,
- determine a time zone wherein said residual near-end reflections are enclosed,
- neutralize said time zone in the process of estimating said attributes.

10                   4. An apparatus according to claim 3, **characterized in that** said processing unit is remotely coupled to said reflectometry unit via a telecommunication network.